Claims

Claim 1 (Currently Amended): An isolated Fv protein, comprising:

a) a variable region of a heavy chain of a monoclonal antibody ~~that binds the antigen specifically bound by monoclonal antibody 8H9~~

b) a variable region of a light chain of the monoclonal antibody ~~that binds the antigen specifically bound by monoclonal antibody 8H9~~

wherein the variable region of the heavy chain and the variable region of the light chain ~~a heavy chain of a monoclonal antibody that binds~~ together bind the antigen specifically bound by an antibody comprising both the variable region of the heavy chain encoded by the nucleic acid molecule deposited in accordance with the Budapest Treaty as ATCC Accession No. PTO-5660 and the variable region of the light chain encoded by the nucleic acid molecule deposited in accordance with the Budapest Treaty as ATCC Accession NO. PTA-5661, ~~monoclonal antibody 8H9 and~~

wherein the variable region of [[a]] the heavy chain and the variable region of the light chain ~~of the monoclonal antibody that binds the antigen specifically bound by monoclonal antibody 8H9~~ are covalently linked by disulfide bonds; and

[[b]] c) an effector molecule comprising a toxin~~;~~

~~wherein the Fv protein specifically binds the epitope bound by monoclonal antibody 8H9~~.

Claim 2 (Original): The isolated Fv protein of claim 1, wherein said effector molecule comprises ricin A, abrin, diphtheria toxin or a subunit thereof, *Pseudomonas* exotoxin or a portion thereof, saporin, restrictocin or gelonin.

Claim 3 (Original): The isolated Fv protein of claim 2, wherein said effector molecule is selected from the group consisting of PE38, PE40, PE38KDEL, and PE38REDL.

Claim 4 (Currently Amended): The isolated Fv protein of claim 1, wherein the variable region of the heavy chain comprises [[an]] the amino acid sequence set forth as SEQ ID NO: 7, and wherein

the variable region of the light chain comprises [[an]] the amino acid sequence set forth as SEQ ID NO: 8.

Claim 5 (Canceled).

Claim 6 (Currently Amended): An isolated Fv protein comprising

(a) a variable region of a heavy chain and a variable region of a light chain, wherein the variable region of the heavy chain comprises a heavy chain framework region and three complementarity determining regions HCDR1, HCDR2, and HCDR3, wherein the (HCDR)-1 comprises [[an]] the amino sequence NYDIN (amino acids 31-35 of SEQ ID NO: 3) the HCDR2 comprising [[an]] the amino acid sequence WIFPGDGSTQY (amino acids 50-60 of SEQ ID NO: 3), the HCDR3 comprises [[an]] the amino acid sequence QTTATWFAY (amino acids 99-107 of SEQ ID NO: 3) and wherein the variable region of the light chain comprises a light chain framework region and three complementarity determining regions (LCDR)1, a LCDR2, and LCDR3, wherein the LCDR1 comprises [[an]] the amino acid sequence RASQSISDYLH (amino acids 157-167 of SEQ ID NO: 3), the LCDR2 comprises [[an]] the amino acid sequence YASQSIS (amino acids 183-189 of SEQ ID NO: 3), and the LCDR3 comprises [[an]] the amino acid sequence QNGHSFPLT (amino acids 222-230 of SEQ ID NO: 3); and

(b) an effector molecule

wherein the Fv protein binds the epitope bound by monoclonal antibody 8H9.

Claim 7 (Canceled)

Claim 8 (Original): The isolated Fv protein of claim 6, wherein the heavy chain framework and the light chain framework are human.

Claim 9 (Canceled).

Claim 10 (Previously Presented): The isolated Fv protein of claim 6, wherein the effector molecule comprises a toxin covalently linked to the variable region of the heavy chain.

Claim 11 (Original): The isolated Fv protein of claim 10, wherein the toxin comprises a *Pseudomonas* exotoxin.

Claim 12 (Original): The isolated Fv protein of claim 11, wherein the *Pseudomonas* exotoxin is PE38.

Claim 13 (Previously Presented): The Fv of claim 12, wherein said Fv polypeptide comprises an amino acid sequence set forth as SEQ ID NO: 7 and an amino acid sequence set forth as SEQ ID NO: 8.

Claims 14-20 (Canceled).

Claim 21 (Currently Amended): A pharmaceutical composition ~~comprising~~ providing 0.5 to 15 milligrams per kilogram ~~a therapeutically effective amount~~ of the isolated Fv protein of claim 1 sufficient to inhibit tumor cell growth, and a pharmaceutically acceptable carrier.

Claim 22 (Original): The composition of claim 21, wherein said effector molecule is a Pseudomonas exotoxin.

Claim 23 (Original): The composition of claim 21, wherein the Pseudomonas exotoxin molecule comprises PE38, PE40, PE38KDEL or PE38REDL.

Claim 24 (Withdrawn): A method for killing a tumor cell, comprising contacting the cell with an effective amount of the isolated Fv protein of claim 1, thereby killing the cell.

Claim 25 (Withdrawn): The method of claim 24, wherein the cell is in vitro.

Claim 26 (Withdrawn): The method of claim 24, wherein the cell is in vivo.

Claim 27 (Withdrawn): The method of claim 24, wherein the Fv protein comprises an effector molecule comprising ricin A, abrin, diphtheria toxin or a subunit thereof, *Pseudomonas* exotoxin or a portion thereof, saporin, restrictocin or gelonin.

Claim 28 (Withdrawn): The method of claim 27, wherein the effector molecule comprises a *Pseudomonas* exotoxin.

Claim 29 (Withdrawn): The method of claim 28, wherein the *Pseudomonas* exotoxin comprises PE35, PE37, PE38 or PE40.

Claim 30 (Withdrawn): The method of claim 29, wherein the *Pseudomonas* exotoxin is PE38.

Claim 31 (Withdrawn): The method of claim 24, wherein the cell is a breast cancer cell, an osteosarcoma cell, or a neuroblastoma cell.

Claim 32 (Withdrawn): A method for treating a tumor in a subject, comprising administering to the subject a therapeutically effective amount of the Fv protein of claim 1, thereby treating the tumor.

Claim 33 (Withdrawn): The method of claim 32, wherein the tumor is a breast cancer, an osteosarcoma, or a neuroblastoma.

Claims 34-38: (Canceled).

Claim 39 (New): The composition of claim 21, wherein the composition does not produce toxicity in a subject.

Claim 40 (New): The composition of claim 21, wherein the composition does not produce toxicity in a subject when administered daily for three days.